Statement of Basis

Title V Air Quality Permit Modification

SAPA Extrusions, Inc. – Yankton, South Dakota

South Dakota
Department of Environment and Natural Resources

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1.0 Operational Description

1.1 Background

SAPA Extrusions, Inc. (SAPA) operates an aluminum extrusion and painting facility in Yankton, South Dakota, which produces soft alloy aluminum products for the consumer products industry. The primary Standard Industrial Classification codes are 3354 Rolling, Drawing, and Extruding of Nonferrous Metals – Aluminum Extruded Products and 3341 Secondary Smelting and Refining of Nonferrous Metals.

The production process is composed of three melt furnaces, a casting pit, two homogenizing furnaces, four log heaters, and four extrusion presses. The painting process consists of two vertical electrostatic paint lines. Emissions from the north paint line are uncontrolled. Volatile organic compound emissions from the south paint line are controlled using a regenerative thermal oxidizer.

Cast aluminum logs are processed through the casthouse crop saw prior to further heat treatment in the homogenizing ovens. Prior to extrusion, the homogenized logs are preheated in one of four natural gas fired log heaters. The logs are then hydraulically sheared or sawed into billets. The billets are sent to four extrusion presses where the heated billet is mechanically forced (extruded) through a die to produce various customer ordered mechanical shapes.

The extruded pieces are cut using hot saws and then cooled on air fan quench tables. Two of the extrusion presses are equipped with a water quench table in addition to the air fans to cool the heavier walled aluminum shapes. The aluminum billets are then stretched and cut to length. After extrusion, cooling, and stretching, the semi-finished extruded aluminum pieces are placed into one of six natural gas fired age ovens to impart the necessary mechanical properties to the extruded pieces. Some of the pieces undergo additional fabrication to customer specifications.

SAPA operates two paint lines. The north paint line was the original paint line and consists of two application booths. Emissions from the north paint line are uncontrolled. The south paint line was installed in 1992 and consists of four application booths. Emissions from the south paint line are controlled using a regenerative thermal oxidizer. The application booths use an airless electrostatic method of paint application. After painting, the aluminum pieces are conveyed through an electrically heated paint flash off room. The paint flash off room is maintained at 300°F to remove all volatile material. The pieces are then sent to the bake oven where the paint cures.

SAPA's Title V air quality permit was renewed on May 22, 2007. SAPA uses greater than 250 gallons per year of coating that contains hazardous air pollutants in the surface coating of extruded aluminum components. Therefore, the facility is an existing source subject to 40 Code of Federal Regulations (CFR) Part 63, Subpart MMMM – National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products. Conditions were included in the permit to ensure compliance with this subpart.

On June 5, 2008, SAPA's Title V air quality permit was revised through a minor permit amendment to add a facility specific emission limit alternative method of compliance under 40 CFR Part 63, Subpart MMMM.

Table 1-1 provides a description of the permitted units, operations, and processes derived from SAPA's existing Title V air quality permit issued June 5, 2008.

Table 1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million BTUs per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million BTUs per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million BTUs per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1), fired with natural gas.	The maximum heat input capacity is 9.0 million BTUs per hour.	Not applicable
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2), fired with natural gas.	The maximum heat input capacity is 9.0 million BTUs per hour.	Not applicable
#6	1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater), fired with natural gas.	The maximum heat input capacity is 4.5 million BTUs per hour.	Not applicable
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater), model L250-60/105/3FWS250FK, fired with natural gas. This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace (2750 Log Heater), model number 89-20-4-T-PR25-2-P-L, fired with natural gas.	The maximum heat input capacity of the existing unit is 3.6 million BTUs per hour. The maximum heat input capacity of the new unit is 6.0 million BTUs per hour.	Not applicable

Unit	Description	Maximum Operating Rate	Control Device
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater), model number 75/120/3FKWS250FK, fired with natural gas.	The maximum heat input capacity is 3.7 million BTUs per hour.	Not applicable
#9	2006 Belco Industries alloyed aluminum log heater (3500 Log Heater), fired with natural gas.	The maximum heat input capacity is 7.5 million BTUs per hour.	Not applicable
#10	Coating line [1] – 1979 Belco Industries paint application booths (2) and paint flash off area on the original paint line process (Paint Line #1).	Not applicable	Not applicable
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1), fired with natural gas.	The maximum heat input capacity is 5.0 million BTUs per hour.	Not applicable
#12	Coating line [1] – 1992 Belco Industries paint application booths (2), top coat application booths (2), and paint flash off area on the vertical paint line process (Paint Line #2).	Not applicable	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer fired with natural gas. The regenerative thermal oxidizer has a maximum heat input capacity of 4.0 million BTUs per hour.
	1992 Belco Industries aluminum extrusions paint curing bake oven on the 1992 vertical paint line process (South Bake Oven – Paint Line #2), fired with natural gas.	The maximum heat input capacity of the bake oven is 5.0 million BTUs per hour.	
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1st Stage Washer Burner – South Paint Line #2), fired with natural gas.	The maximum heat input capacity is 5.0 million BTUs per hour.	Not applicable

[1] – Coating operation includes the equipment used to apply cleaning materials to a substrate to prepare it for coating application (surface preparation) or to remove dried coating; to apply coating to a substrate (coating application) and to dry or cure the coating after application; or to clean coating operation equipment (equipment cleaning); all storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed; all manual and automated equipment and containers used for conveying coatings, thinners and/or other additives, and cleaning materials; and all storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation.

On September 23, 2010, the South Dakota Department of Environment and Natural Resources (DENR) determined that an application from SAPA to replace Unit #6 with Unit #6R did not require a permit revision because Unit #6R once installed would be considered an insignificant activity. DENR notified SAPA that they could move forward with the project.

1.2 Proposed Permit Amendment

On May 18, 2010, SAPA submitted a permit amendment to revise its existing Title V air quality permit regarding the existing permitted natural gas fired equipment, which involves Unit #4, #5, #6R, #7-#9 and #11-#13. SAPA is requesting that they be allowed to combine the quantity of fuel combusted in these units and have a combined limit on the amount of natural gas combusted during a calendar year to allow them a measure of flexibility in their permit. SAPA is requesting the ability to install/construct a fuel burning unit or replace an existing permitted unit without requiring SAPA to go through the standard permitting process of and individual review of each proposed unit to determine if a permit amendment or modification is required. Instead, SAPA requests that units be added or removed as required for the operation of the facility without applying for a permit as long as the proposed equipment did not increase the total amount of fuel combusted by permitted units. This proposed revision does not impact the construction or replacement of the melters or thermal oxidizer.

In its application, SAPA lists Unit #6 at 5.5 million British Thermal Units (Btus) per hour (MMBtus/hr) which is permitted at 5.0 MMBtus/hr and Unit #8 at 5.5 MMBtus/hr which is permitted at 3.7 MMBtus/hr. Unit #6 will be replaced with Unit #6R and Unit #6R was considered an insignificant activity by DENR on September 23, 2010. SAPA stated the manufacturer's specifications for Unit #8 was for 3.7 MMBtus/hr but the burner configuration is similar to the units rated at 5.5 MMBtus/hr and they listed it accordingly. DENR will revise the permit to list the maximum design operating rate of Unit #8 at 5.5 MMBtus/hr.

SAPA is proposing to limit the total amount of natural gas combusted by the fuel burning units to 494.9 million cubic feet per year provided they are allowed to replace process heaters, add process heaters or eliminate process heaters. Currently, SAPA operates eight units with process heaters (e.g., Unit #4, #5, #7-#9, and #11-#13) and 12 units that are considered insignificant activities.

Instead of limiting the amount of natural gas being burned on a annual basis, DENR is proposing to allow SAPA to install up to 10 units throughout the term of the Title V air quality permit with a maximum design operating rate less than 10 million Btus per hour per unit and burns only natural gas. Any process heater that has a maximum design operating rate of 3.5 million Btus per hour or less will not count towards the 10 units. SAPA will be able to replace, add or eliminate process heaters that meet this description at any time. In addition, an existing process heater that is replaced with a process heater of the same maximum design operating rate or less will not count towards the 10 units. The only units that will count are those that are added with a maximum design operating rate of greater than 3.5 million Btus per hour but less than 10 million Btus per hour. Any unit with a maximum design operating rate less than 10 million Btus per

hour that replaces an existing process heater and has a maximum design operating rate greater than the process heater being replaced also counts towards the 10 units.

2.0 Potential Emissions

2.1 Emission Factors

DENR derives emission factors from a variety of sources depending on the type of operation, equipment, and emissions. The most common sources for emission factors are equipment specific stack tests, stack tests on similar equipment and operations, and EPA's AP-42 document, which lists emission factors for many equipment types commonly included in air quality permits. The complete AP-42 document is available at the following web address:

http://www.epa.gov/ttn/chief/ap42/

Emission factors used in this permit review were developed for total suspended particulate (TSP), particulate matter equal to 10 microns in diameter or less (PM_{10}), particulate matter equal to 2.5 microns in diameter or less ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen oxide (NOx), volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and carbon monoxide (CO).

DENR calculates potential emissions for each unit assuming the unit operates every hour of every day of the year at maximum designed operating capacity while using the fuel that will result in the greatest emissions. Physical or operational limits on the operating capacity or emissions rate of a unit, including pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, are included in the potential emission calculations if the limitation is federally enforceable.

The emission factors for the 10 process heaters are derived from EPA's Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Tables 1.4-1 and 1.4-2, 7/98. DENR did not find any emission factors for a process heater and determined that the emission factors for boilers best represented the emissions from a process heater. Boilers with a heat input capacity less than 100 million Btus per hour are classified in AP-42 as small boilers. Table 2-1 lists the air emission factors for the combustion of natural gas in small boilers.

Table 2-1 – Emission Factors for Combustion of Natural Gas

Pollutant	TSP/PM_{10}/$PM_{2.5}$ [1]	SO_2	NOx	CO	VOCs	HAPs
Emission Factor (lbs/MMcf)	7.6	0.6	100	84	5.5	1.89

[1] – It is noted in AP-42 that particulate emissions from burning natural gas are all less than one micron in diameter. Therefore, the emission factor for TSP, PM_{10}, and $PM_{2.5}$ are equivalent.

2.2 Potential Emissions

In this case there are no air pollution control devices; therefore, potential uncontrolled and controlled emissions are equivalent. The potential emissions are calculated using the emission factors in Table 2-1, a maximum design operating rate of 9.9 million Btus per hour, and Equation

2-1. The result is multiplied by 10 for the 10 units being allowed to be added through the term of the permit. The potential emissions are summarized in Table 2-2.

Equation 2-1 – Potential Emission Calculation

$$PotentialEmission\frac{tons}{year} = EmissionFactor\frac{lbs}{MMcf} \times 9.9\frac{MMBtus}{hour} \times 8{,}760\frac{hrs}{yr} \div 1{,}020\frac{Btus}{cf} \div 2{,}000\frac{lbs}{ton}$$

Table 2-2 – Potential Emissions for 10 Units (tons per year)

#	TSP/PM_{10}/$PM_{2.5}$	SO_2	NOx	CO	VOCs	HAPs
1-10	3.2	0.3	42.5	35.7	2.3	0.8

3.0 Permit Requirements

3.1 New Source Review Permit Program

ARSD 74:36:10:01 notes that New Source Review regulations apply to areas of the state designated as nonattainment pursuant to the Clean Air Act for any pollutant regulated under the Clean Air Act. SAPA is located in Yankton, South Dakota, which is in attainment or unclassifiable for all the pollutants regulated under the Clean Air Act. Therefore, SAPA is not subject to the New Source Review permit program.

3.2 Prevention of Significant Deterioration

Any stationary source which constructed or modified after August 7, 1977 and emits or has the potential to emit 250 tons per year or more of any air pollutant is subject to Prevention of Significant Deterioration (PSD) requirements (see ARSD 74:36:09, as referenced to 40 CFR § 52.21(b)(1)). Any stationary source which emits, or has the potential to emit, 100 tons per year or more of any air pollutant and is one of the 28 named PSD source categories is subject to PSD requirements (see ARSD 74:36:09, as referenced to 40 CFR § 52.21(b)(1)).

SAPA is not one of the 28 named PSD source categories; therefore, the major source threshold under the PSD program is 250 tons per year. The facility was originally built in 1979 which was before the PSD program was applicable. In 1992, the South Paint Line (Unit #12) was installed with potential volatile organic compound (VOC) emissions greater than 250 tons per year. An enforcement action was taken which resulted in the facility submitting an application to install a regenerative thermal oxidizer on the new paint line to control VOC emissions on June 20, 1995. A Title V air quality permit was issued to the facility on March 17, 1998. The Title V air quality permit included federally enforceable operating limits to restrict SAPA's plantwide VOC emissions to less than 250 tons per year, which allows SAPA to be considered a minor source and not subject to a PSD review or permit.

The proposed 10 units will need to be included in the federally enforceable permit conditions to ensure SAPA continues to be considered a minor source under the PSD program

3.3 New Source Performance Standards

DENR reviewed the New Source Performance Standards and determined that are no standards applicable to process heaters with a maximum design operating rate less than 10 million Btus per hour.

3.4 National Emission Standards for Hazardous Air Pollutants

DENR reviewed the National Emission Standards for Hazardous Air Pollutants (NESHAP) in 40 CFR Part 61 and determined that there are no NESHAP standards applicable to process heaters with a maximum design operating rate less than 10 million Btus per hour.

3.5 Maximum Achievable Control Technology Standards

SAPA is currently subject to the requirements of 40 CFR, Part 63, Subpart RRR (National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production) and MMMM (National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products**.** However, these regulations are not applicable to the proposed change.

DENR reviewed the remaining standard and determined there were no applicable standards for process heaters with a maximum design operating rate less than 10 million Btus per hour at this time. It is important to note that EPA is in the process of proposing standards for industrial boilers and process heaters at major sources of HAPs that could possibly affect SAPA's operations. These standards, if approved and adopted, would be reviewed at that time.

3.6 State Requirements

The proposed addition of 10 process heaters with a maximum design operating rate greater than 3.5 million Btus per hour but less than 10 million Btus per hour is considered a permit modification. Table 3-1 compares the potential emissions from the proposal to the potential emissions from the existing operations.

Table 3-1 – Potential Emissions (tons/year)

Description	$TSP/PM_{10}/PM_{2.5}$	SO_2	NO_X	CO	VOC	HAP
Existing process heaters	5.3	0.4	67.5	58.1	3.8	1.3
North melter	1.6	-	-	-	-	2.5
South melter	1.6	-	-	-	-	2.5
West melter	1.6	-	-	-	-	2.5
Paint Line #1	-	-	-	-	218.5	91.1
Paint Line #2	-	-	-	-	8.9	6.2
10 process heaters	3.2	0.3	42.5	35.7	2.3	0.8
Total Emissions	**13.3**	**0.7**	**110.0**	**93.8**	**233.5**	**106.9**

The potential emissions with the addition of the 10 units does not change SAPA's requirements to obtain a Title V air quality permit and potential VOC emissions are still below the major source threshold under the PSD permit program.

3.6-1 Particulate Matter Emission Limits

The 10 proposed process heaters will have a maximum design operating rate greater than 3.5 million Btus per hour but less than 10 million Btus per hour. In accordance with ARSD 74:36:06:02(1)(a), a fuel burning unit with heat input value less than 10 million Btus per hour may not exceed the total suspended particulate matter emission limit of 0.6 pounds per million Btus. Based on past experience with natural gas fired units, the 10 process heaters are capable of meeting the state's particulate matter emission limit.

3.6-2 Sulfur Dioxide Emission Limits

In accordance with 74:36:06:02(2), South Dakota's sulfur dioxide emission limits in ARSD 74:36:06:02(2), a fuel burning unit with heat input value less than 10 million Btus per hour may not exceed the sulfur dioxide emissions of 3.0 pounds per million Btus. Based on past experience with natural gas fired units, the 10 process heaters are capable of meeting the state's sulfur dioxide emission limit.

3.6-3 Visible Emission Limit

In accordance with 74:36:12:01, the owner or operator may not discharge into the ambient air from a single unit of emissions an air pollutant of a density equal to or greater than that designated as 20 percent opacity. Based on DENR's experience with natural gas units, the 10 process heaters are capable of complying with the state's visible emission limit.

4.0 Recommendation

SAPA requested a ceiling be placed on the annual amount of natural gas combusted in Units #4-#9 and #11-#13. In turn, SAPA would like the flexibility to replace existing units or to add additional natural gas fired heating units without opening up the permit as long as this ceiling was not exceeded. SAPA requested a ceiling of 478.73 million cubic feet of natural gas be placed upon these units.

DENR determined that the addition of 10 process heaters greater than 3.5 million Btus but less than 10 million Btus will not change any permitting requirements and will still allow SAPA to maintain VOC emissions below the major source threshold under the PSD permit program. In addition, this does not require a natural gas limit and the associated recordkeeping and reporting. The proposed addition of 10 process heaters is considered a permit modification. A permit modification is required typically to go through a construction permit then a modification of the existing Title V air quality permit. But in this case where the process heaters are pre-built, DENR is going to just modify the Title V air quality permit and forgo a construction permit.

The proposed modifications to the existing permit are shown in Appendix A. Questions pertaining to this permit recommendation should be directed to Keith Gestring, Natural Resources Project Engineer, Air Quality Program.

APPENDIX A

Permit Modification

PERMIT MODIFICATION

The following changes to the existing permit represent changes that meet the definition of a permit modification. Additions to the existing permit are represented in blue, bold, and underline and deletions are represented in red with overstrikes. In the case where permit conditions are deleted or added between permit conditions, the permit conditions will be renumbered appropriately when the permit is issued.

1.0 STANDARD CONDITIONS

1.1 Operation of source. In accordance with Administrative Rules of South Dakota (ARSD) 74:36:05:16.01(8), the owner or operator shall operate the units, controls, and processes as described in Table #1 in accordance with the statements, representations, and supporting data contained in the complete permit application submitted and dated January 30, 2007, ~~and~~ March 3, 2008, **and May 18, 2010,** unless modified by the conditions of this permit. The control equipment shall be operated in a manner that achieves compliance with the conditions of this permit at all times. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

Table #1
Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million Btus per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million Btus per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter), fired with natural gas.	The maximum heat input capacity is 22.0 million Btus per hour. The furnace processes 7.5 tons of aluminum per hour.	Not applicable
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1), fired with natural gas.	The maximum heat input capacity is 9.0 million Btus per hour.	Not applicable
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2), fired with natural gas.	The maximum heat input capacity is 9.0 million Btus per hour.	Not applicable

Unit	Description	Maximum Operating Rate	Control Device
#6	~~1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater), fired with natural gas.~~	~~The maximum heat input capacity is 4.5 million Btus per hour.~~	~~Not applicable~~
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater), model L250-60/105/3FWS250FK, fired with natural gas. This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace (2750 Log Heater), model number 89-20-4-T-PR25-2-P-L, fired with natural gas.	The maximum heat input capacity of the existing unit is 3.6 million Btus per hour. The maximum heat input capacity of the new unit is 6.0 million Btus per hour.	Not applicable
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater), model number 75/120/3FKWS250FK, fired with natural gas.	The maximum heat input capacity is ~~3.7~~ **5.5** million Btus per hour.	Not applicable
#9	2006 Belco Industries alloyed aluminum log heater (3500 Log Heater), fired with natural gas.	The maximum heat input capacity is 7.5 million Btus per hour.	Not applicable
#10	Coating line [1] – 1979 Belco Industries paint application booths (2) and paint flash off area on the original paint line process (Paint Line #1).	Not applicable	Not applicable
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1), fired with natural gas.	The maximum heat input capacity is 5.0 million Btus per hour.	Not applicable
#12	Coating line [1] – 1992 Belco Industries paint application booths (2), top coat application booths (2), and paint flash off area on the vertical paint line process (Paint Line #2).	Not applicable	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer fired with natural gas. The regenerative thermal oxidizer has a maximum heat input capacity of 4.0 million Btus per
	1992 Belco Industries aluminum extrusions paint curing bake oven on the 1992 vertical paint line process (South Bake Oven – Paint	The maximum heat input capacity of the bake oven is 5.0 million Btus per hour.	

Unit	Description	Maximum Operating Rate	Control Device
	Line #2), fired with natural gas.		hour.
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1st Stage Washer Burner – South Paint Line #2), fired with natural gas.	The maximum heat input capacity is 5.0 million Btus per hour.	Not applicable
#14 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#15 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#16 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#17 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#18 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#19 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#20 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#21 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#22 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**
#23 [2]	**Process heater fired with natural gas.**	**Greater than 3.5 million Btus per hour but less than 10 million Btus per hour.**	**Not applicable**

[1] – Coating operation includes the equipment used to apply cleaning materials to a substrate to prepare it for coating application (surface preparation) or to remove dried coating; to apply coating to a substrate (coating application) and to dry or cure the coating after application; or to clean coating operation equipment (equipment cleaning); all storage containers and mixing vessels in which coatings, thinners and/or other additives, and cleaning materials are stored or mixed; all manual and automated equipment and containers used for conveying coatings, thinners and/or other additives, and

cleaning materials; and all storage containers and all manual and automated equipment and containers used for conveying waste materials generated by a coating operation**; and**

[2] – The owner or operator may install these process heaters fired only with natural gas during the term of this permit.

5.0 RECORD KEEPING AND REPORTING REQUIREMENTS

5.15 Initial notifications. In accordance with ARSD 74:36:05:16.01(9), the owner or operator shall notify the Secretary of the actual date of initial startup of Units #14 through #23. The notification shall be postmarked with 15 days after the date of initial startup. Initial startup is the first date that natural gas is burned in the applicable unit. The initial notification shall include the following information:

1. **Name of the facility, permit number, and reference to this permit condition; and**
2. **The initial startup date for the unit or units.**

6.0 CONTROL OF REGULATED AIR POLLUTANTS

6.3 Total suspended particulate matter limits. In accordance with ARSD 74:36:06:02(1) and/or ARSD 74:36:06:03(1), the owner or operator shall not allow the emission of total suspended particulate matter in excess of the emission limit specified in Table #2 for the appropriate permitted unit, operation, and process.

Table #2
Total Suspended Particulate Matter Emission Limit

Unit	Description	Emission Limit
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter)	15.8 pounds per hour
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter)	15.8 pounds per hour
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter)	15.8 pounds per hour
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1)	0.6 pounds per MMBtus heat input
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2)	0.6 pounds per MMBtus heat input
~~**#6**~~	~~1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater)~~	~~0.6 pounds per MMBtus heat input~~
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater). This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace.	0.6 pounds per MMBtus heat input
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater)	0.6 pounds per MMBtus heat input
#9	2006 Belco Industries alloyed aluminum log	0.6 pounds per MMBtus heat input

Unit	Description	Emission Limit
	heater (3500 Log Heater)	
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1)	0.6 pounds per MMBtus heat input
#12	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer	0.6 pounds per MMBtus heat input
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1st Stage Washer Burner – South Paint Line #2)	0.6 pounds per MMBtus heat input
#14	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#15	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#16	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#17	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#18	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#19	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#20	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#21	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#22	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**
#23	**Process heater fired with natural gas.**	**0.6 pounds per MMBtus heat input**

6.4 **Sulfur dioxide limits.** In accordance with ARSD 74:36:06:02(2) and/or ARSD 74:36:06:03(2), the owner or operator shall not allow the emission of sulfur dioxide in excess of the emission limit specified in Table #3 for the appropriate permitted unit, operations, and process.

Table #3
Sulfur Dioxide Emission Limit

Unit	Description	Emission Limit
#1	1979 Warwick Furnace Company aluminum remelt furnace (North Melter)	3.0 pounds per million Btu heat input
#2	1979 Warwick Furnace Company aluminum remelt furnace (South Melter)	3.0 pounds per million Btu heat input

Unit	Description	Emission Limit
#3	1988 Certified Industrial Technology aluminum remelt furnace (West Melter)	3.0 pounds per million Btu heat input
#4	1979 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #1)	3.0 pounds per million Btu heat input
#5	1988 Certified Industrial Technology alloyed aluminum log furnace (Homogenizing Oven #2)	3.0 pounds per million Btu heat input
~~**#6**~~	~~1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater)~~	~~3.0 pounds per million Btu heat input~~
#7	1991 Elhaus Industries alloyed aluminum log heater (2750 log heater). This unit may be replaced during the term of this permit by a 2007 Belco aluminum heating furnace.	3.0 pounds per million Btu heat input
#8	1989 Elhaus Industries alloyed aluminum billet heater (3000 Log Heater)	3.0 pounds per million Btu heat input
#9	2006 Belco Industries alloyed aluminum log heater (3500 Log Heater)	3.0 pounds per million Btu heat input
#11	1979 Belco Industries aluminum extrusions paint curing bake oven on the original paint line process (North Bake Oven – Paint Line #1)	3.0 pounds per million Btu heat input
#12	1995 TELLKAMP Systems, Inc., regenerative thermal oxidizer	3.0 pounds per million Btu heat input
#13	1992 Belco Industries aluminum extrusions pretreatment washer stage 1 on the 1992 vertical paint line process (1st Stage Washer Burner – South Paint Line #2)	3.0 pounds per million Btu heat input
#14	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#15	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#16	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#17	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#18	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#19	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#20	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#21	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat**

Unit	Description	Emission Limit
		input
#22	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**
#23	**Process heater fired with natural gas.**	**3.0 pounds per million Btu heat input**

Compliance with the sulfur dioxide emission limit is based on a three-hour rolling average, which is the arithmetic average of three contiguous one-hour periods.

18.0 MONITORING

18.1 Periodic monitoring for opacity limits. In accordance with ARSD 74:36:13:07, the owner or operator shall demonstrate compliance with the opacity limits in Chapter 6.0, except for Unit(s) #4, #5, ~~#6~~,#7, #8, #9, #10, #11, #12, ~~and~~ #13, **#14, #15, #16, #17, #18, #19, #20, #21, #22, and #23** on a periodic basis. Periodic monitoring shall be based on the amount of visible emissions from each unit and evaluated according to the following steps:

Step 1: If there are no visible emissions from a unit subject to an opacity limit, periodic monitoring shall consist of a visible emission reading. A visible emission reading shall consist of a visual survey of each unit over a two-minute period to identify if there are visible emissions. The visible emission reading must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission readings on each unit subject to an opacity limit in Chapter 6.0 shall be based on the following frequency:

a. The owner or operator shall conduct a visible emission reading once per calendar month;
b. If no visible emissions are observed from a unit in six consecutive monthly visible emission readings, the owner or operator may decrease the frequency of readings from monthly to semiannually for that unit; or
c. If no visible emissions are observed from a unit in two consecutive semiannual visible emission readings, the owner or operator may decrease the frequency of testing of readings from semiannually to annually for that unit.

Step 2: If visible emissions are observed from a unit at any time other than periods of startup, shutdown, or malfunction, the owner or operator shall conduct a visible emission test on that unit to determine if the unit is in compliance with the opacity limit specified in Chapter 6.0. The emission test shall be for six minutes and conducted in accordance with 40 CFR Part 60, Appendix A, Method 9. The visible emission test must be conducted while the unit is in operation; but not during periods of startup, shutdown, or malfunctions. Visible emission tests shall be based on the following frequency:

a. The visible emission test must be conducted within one hour of witnessing a visible emission from a unit during a visible emission reading;

b. If the visible emission test required in Step 2(a) results in an opacity value less than or equal to 50 percent of the opacity limit for the unit, the owner or operator shall perform a visible emission test once per month;
c. If the opacity value of a visible emission test is less than five percent for six straight monthly tests, the owner or operator may revert back to monthly visible emission readings as required in Step 1;
d. If the visible emission test required in Steps 2(a) or 2(b) results in an opacity value greater than 50 percent of the opacity limit but less than the opacity limit, the owner or operator shall perform a visible emission test once per week; or
e. If the visible emission test in Step 2(d) results in an opacity value less than or equal to 50 percent of the opacity limit for six straight weekly readings, the owner or operator may revert back to a monthly visible emission test as required in Step 2(b).

The person conducting the visible emission test must be certified in accordance with 40 CFR Part 60, Appendix A, Method 9. If a visible emission test is required before a person is certified in accordance with permit condition 18.2, the owner or operator shall notify the Secretary within 24 hours of observing the visible emissions to schedule a visible emission test performed by a state inspector.

APPENDIX B

List of Insignificant Activities

List of Insignificant Activities:

Unit #	Maximum Operating Rate	Pollution Control Equipment
#6	1979 Elhaus Industries alloyed aluminum log heater (1800 Log Heater), fired with natural gas.	**Not Applicable**